STATE FOREST LAND
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decided whether an EIS is required.

Instructions for Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can. *Questions in italics are supplemental to Ecology's standard environmental checklist. They have been added by the DNR to assist in the review of state forest land proposals. Adjacency and landscape/ watershed-administrative-unit (WAU) maps for this proposal are available on the DNR internet website at http://www.dnr.wa.gov under "SEPA Center." These maps may also be reviewed at the DNR regional office responsible for the proposal. This checklist is to be used for SEPA evaluation of state forest land activities.*

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later. *All of the questions are intended to address the complete proposal as described by your response to question A-11. The proposal acres in question A-11 may cover a larger area than the forest practice application acres, or the actual timber sale acres.*

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered " does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NON PROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer" and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:

   *Timber Sale Name:***GNOMEX** *Agreement #:***30-079565**

2. Name of applicant: **Washington State Department of Natural Resources**

3. Address and phone number of applicant and contact person:
   Pacific Cascade Region
   601 Bond Road
   P.O. Box 280
   Castle Rock, WA 98611-0280
   Phone: (360) 577-2025
   Contact Person: Robert W. Johnson

4. Date checklist prepared: 05/31/2006

5. Agency requesting checklist:

6. Proposed timing or schedule (including phasing, if applicable):

   a. *Auction Date:***FY 2007**
   b. *Planned contract end date (but may be extended):* **FY 2009**
   c. *Phasing:*

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

   Timber Sale

   Site preparation: **Landings and slash piles may be burned, as needed, to provide plantable spots to ensure adequate regeneration.**

   Regeneration Method: **Harvest units will be planted and some natural regeneration may occur.**

   Vegetation Management: **Treatment of competing vegetation, as needed, in accordance with Forest Practices rules, and the Final Habitat Conservation Plan (1997).**

   Thinning: **May occur at approximately age 15 to manage stand stocking levels in accordance with Forest Practices rules, and the Final Habitat Conservation Plan (1997).**

   Roads: **Roads remaining at the termination of the sale will be used for future management activities as necessary and road maintenance and periodic ditch and culvert cleanout will occur as needed.**

Rock Pits and/or Sale: **The existing Upper Mill Ridge and P&E Extension quarries (Sec. 21, Township 13 North, Range 06 West, W.M. and Sec. 29, Township 13 North, Range 06 West, W.M.) will provide rock for this proposed sale. These quarries may be used as rock sources for future road construction, reconstruction, and maintenance as needed for management of DNR lands. Further expansion of these quarries is not currently planned.**

Other: **Firewood permits for the sale area may be made available to the public if, after harvest, downed wood created during operations is plentiful near roadsides.**

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

☐*303 (d) – listed water body in WAU:* ☐*temp* ☐*sediment* ☐*completed TMDL (total maximum daily load):*
☐*Landscape plan:*
☐*Watershed analysis:*
☐*Interdisciplinary team (ID Team) report:*
☒*Road design plan:* **Available at the Pacific Cascade Region Office.**
☐*Wildlife report:*
☐*Geotechnical report:*
☐*Other specialist report(s):*
☐*Memorandum of understanding (sportsmen's groups, neighborhood associations, tribes, etc.):*
☒*Rock pit plan:* **Upper Mill Ridge and P&E Extension quarries, available at the Pacific Cascade region office.**
☒*Other:* **Information was gathered from the State Soil Survey, GIS maps that display water types, rain on snow areas, and areas of potential mass wasting and erosion; WA Department of Natural Resources Marbled Murrelet Habitat Reclassification maps; WA Department of Natural Resources HCP; Planning and Tracking reports; and ESA listed Salmonid species map produced by Forest Practices. All are available at Pacific Cascade Region Office.**

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

None known.

10. List any government approvals or permits that will be needed for your proposal, if known.

☒*HPA* ☒*Burning permit* ☐*Shoreline permit* ☒*Incidental take permit numbers* **1168 and PRT8125121** ☒*FPA#* **2914472**
☐*Other:*

11. Give brief, complete description of our proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include specific information on project description.)

a. Complete proposal description:

Gnomex is a two-unit sale. The units are located in the north central portion of the Washington Department of Natural Resources P&E forest managment block in Pacific County: Township 13 North, Range 6 West, Sections 07, and 18, W.M. The total sale area is 183 acres, with an estimated 3,400 MBF in U-1 and 3,200 MBF in U-2 . This proposal is in the Mill Creek and Elk Creek WAU's, and the elevation of the sale ranges from 599 to 1022 feet.

b. Timber stand description pre-harvest (include major timber species and origin date), type of harvest, overall unit objectives.

Originally some 216 acres of mature timber were considered for harvest. Thirty one acres were removed from the sale for RMZs, reducing the proposed sale size to approximately 185 acres. After an on-site visit with a DNR region geologist, areas of concern were identified within the remaining 185 acres and either bounded out with timber sale boundary tags or buffered with the leave trees required by Forest Practices and the HCP. Approximately 2 acres of potentially unstable slopes were removed from Unit #1 by bounding them out of the timber sale, reducing the actual proposed sale size to approximately 183 acres.

Unit #1, 91 gross acres, is a 77 year old stand of mature Douglas-fir and western hemlock with some scattered red alder and western redcedar. The understory consists primarily of western hemlock and western redcedar. The forest floor consists of sword fern and some scattered vine maple in the uplands, and salmonberry and devils club in the draws and RMZ's.

Unit # 2, 92 gross acres, is a 72 year old stand of mature Douglas fir and western hemlock, with scattered western redcedar and red alder mostly in the draws. The understory consists of western hemlock and western redcedar. The forest floor consists of sword fern with some scattered vine maple in the uplands, and salmonberry and devil's club in the draws and RMZ's.

<u>Type of Harvest:</u> An even-aged harvest leaving a minimum 8 leave trees per acre will be implemented using cable and shovel harvesting techniques. Where possible, all downed wood, including legacy logs and snags will be left within the sale to provide habitat for amphibians, birds, and small mammals.

<u>Overall Objectives:</u> The overall objective for this forest management unit is to manage for sustainable production of revenue for State trust beneficiaries. Future management of these units will be conducted with a broad landscape perspective in mind, including wildlife habitat and riparian functions. This will be accomplished while meeting and exceeding Forest Practices rules and Habitat Conservation Plan objectives.

c. Road activity summary. See also forest practice application (FPA) for maps and more details.

Type of Activity	How Many	Length (feet) (Estimated)	Acres (Estimated)	Fish Barrier Removals (#)
Construction		**8604**	**4.5**	**0**
Reconstruction		**0**		**0**
Abandonment		**1400**	**0.7**	**0**
Bridge Install/Replace	**0**			**0**
Culvert Install/Replace (fish)	**0**			**0**
Culvert Install/Replace (no fish)	**13**			

12. Location of proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. *(See timber sale map. See also color landscape/WAU map on the DNR website http://www.dnr.wa.gov under "SEPA Center.")*

a. Legal description:

T13N R6W S7
T13N R6W S8
T13N R6W S18

b. Distance and direction from nearest town (include road names):
The sale is approximately 9 miles east of Menlo, WA, access is from the Mill Creek County Road.

c. Identify the watershed administrative unit (WAU), the WAU Sub-basin(s), and acres. (See also landscape/WAU map on DNR website http://www.dnr.wa.gov under " SEPA Center.")

WAU Name	WAU Acres	Proposal Acres
MILL CREEK	**15114.5**	**109**
ELK CREEK	**37433.9**	**74**

Within the Mill Creek WAU this proposal is located in sub-basins 4 and 7. Within the Elk Creek WAU this proposal is located in sub-basin number 8.

13. Discuss any known future activities not associated with this proposal that may result in a cumulative change in the environment when combined with the past and current proposal(s). (See digital ortho-photos for WAU and adjacency maps on DNR website http://www.dnr.wa.gov under "SEPA Center" for a broader landscape perspective.)

This proposal is located in the Mill Creek 05 and Elk Creek 17 WAUs. Agriculture and home sites are located in the valleys near the major streams, with some home sites located in the uplands. There appears to be a recent trend towards increasing conversion of agriculture and forestry lands to home sites in the low to mid elevations. The uplands are mainly managed for timber production. Ownership includes large industrial forests, small private forests, and DNR managed forests. Forested stands within the WAUs appear to be almost exclusively second and third growth stands. The numbers of future and past expiration date Forest Practices shown on the WAU maps (referenced above on the DNR website) along with observations within the WAUs indicate that the timber stands are intensely managed. Management includes regeneration harvests, thinnings, and partial cuts.

The following tables are an estimated summary of past and future activity on DNR-managed land and privately managed land in the WAUs (information is based off of Forest Practices applications that have been approved in the last seven years compiled by the Department's GIS database). No attempt was made to predict future timber harvest on private ownerships within the WAU. The source of this information only provided the acreage on the WAU level. The nearest recent timber harvest within the vicinity of the Gnomex timber sale is unit 2 of the Pit Stop timber sale, 54 acres in size, located approximately 1.0 mile to the south west of Gnomex, harvested during the spring of 2005.

Mill Creek 05 WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	**10,518**	**495**	**16**	**872**	**0**
PRIVATE OWNERSHIP	**4,596**	**463**	**0**	**UNKNOWN**	**UNKNOWN**
TOTAL	**15114**	**958**	**16**	**N/A**	**N/A**

Elk Creek WAU	WAU ACRES	ACRES OF EVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	ACRES OF UNEVEN-AGED HARVEST WITHIN THE LAST SEVEN YEARS	PROPOSED EVEN-AGED HARVEST IN THE FUTURE	PROPOSED UNEVEN-AGED HARVEST IN THE FUTURE
DNR MANAGED LAND	**12,050**	**693**	**45**	**663**	**0**
PRIVATE OWNERSHIP	**25,384**	**2906**	**489**	**UNKNOWN**	**UNKNOWN**
TOTAL	**37,434**	**3599**	**534**	**UNKNOWN**	**UNKNOWN**

Stands selected for harvest on DNR managed lands in these WAUs meet the financial requirements (timber type, stand age, trust, etc.) and the ecological requirements (HCP, Forest Practices rules, green-up policies, etc.) of the Department. Additional stands may be selected for regeneration, thinning, and partial cut harvests in the future as they meet the Department's financial and ecological policies and mandates.

The DNR has an HCP agreement with the federal government concerning threatened and endangered species and their habitats, which requires the Department to manage landscapes in a conservative manner. This agreement substantially helps the Department to mitigate for potential harmful cumulative effects related to its management activities. The HCP is designed to protect and promote fish and wildlife species and their habitats over a broad regional area. The applicable HCP strategies incorporated into this proposal are as follows:

- **Designating RMZs averaging 200 feet wide along four type 3 streams**
- **Designating an RMZ a minimum of 100 feet wide along one type 4 stream**
- **Retaining 8 leave trees per acre scattered and clumped throughout the harvest units**
- **Assessing harvest area for potentially unstable slopes**
- **Analyzing, designing, constructing, and maintaining a road system to minimize effects on the environment.**

Retaining RMZs helps to maintain water quality, stream bank integrity, and stream temperature. There are two 303(d) listed waters for stream temperature(shade) in the Elk Creek WAU, approximately 15 miles down stream on Elk Creek and the Chehalis River. Stream protection measures taken will ensure this proposal will not add to the problem. They also provide LWD recruitment and habitat for riparian obligate species. Furthermore, the RMZs will develop older forest characteristics that will help support older-forest dependant wildlife populations. The strategy of retaining at least 8 leave trees per acre in Units 1 and 2 provides legacy elements for recruitment of future snags, coarse woody debris, multi-layered stands, and large diameter trees in the upland areas. In combination, these features will provide elements of older forest habitat characteristics within the third growth stand for wildlife species dependent on older forest habitat. Finally, road system analysis and design required under the Forest Practices RMAP process will improve roads and minimize road impacts on the environment. The road plan analysis required under the Forest Practice RMAP process in the P&E Block has been completed. Haul routes for this proposal have been evaluated for potential impact to the environment. To assure sediment delivery is controlled during active hauling, multiple cross drains, sediment ponds, and other structures may be used to disconnect ditch water from flowing streams. Road ditch water will be routed to the forest floor for filtering prior to entering flowing watercourses, and new road construction will be located on or near stable ridge top locations.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site (check one):

☐Flat, ☐Rolling, ☒Hilly, ☐Steep Slopes, ☐Mountainous, ☐Other:

1) General description of the WAU or sub-basin(s) (landforms, climate, elevations, and forest vegetation zone).
The Mill Creek WAU, located at an elevation range of 20 to 2,100 feet, has topography characterized as rolling with deep "V"-shaped draws in higher elevations. The WAU averages 70-110 inches of rain per year, which supports a dominant western hemlock timber type in the west portion of the WAU and a dominant Douglas-fir timber type in association with hardwood species such as red alder in the east portion of the WAU. Mill Creek flows west into the Willapa River, then to Willapa Bay.

The Elk Creek WAU contains prominent hills, and steep short slopes. The elevations range from 283 feet in the valley bottoms, to 2416 feet at the peaks. There are slopes over 100%, but most range from 40% to 80% in upper portions of drainages and between 20% and 50% in lower portions of drainages. Rainfall averages 60-80 inches per year. Approximately 7% of the WAU is within the rain on snow zone. Only 1% of the WAU is considered unforested. The forest vegetation zone is western hemlock. The major timber type is Douglas-fir, with lesser amounts of western hemlock and western redcedar in the uplands and red alder in the draws. Elk Creek flows from the west to the east in to the Chehalis River, then to Grays Harbor.

2) Identify any difference between the proposal location and the general description of the WAU or sub-basin(s).
Both units 1 and 2 and the sub-basins they are within are similar to their respective WAUs.

b. What is the steepest slope on the site (approximate percent slope)?

During initial recon, slopes of up to 90% were identified on the site. These slopes are now either within the RMZ's or inside Leave Tree Areas and bounded out of the sale. The steepest slope remaining within the harvest area is 61%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland. *Note: The following table is created from state soil survey data. It is a roll-up of general soils information for the soils found in the entire sale area. It is only one of several site assessment tools used in conjunction with actual site inspections for slope stability concerns or erosion potential. It can help indicate potential for shallow, rapid soil movement, but often does not represent deeper soil sub-strata. The actual soils conditions in the sale area may vary considerably based on land-form shapes, presence of erosive situations, and other factors. The state soil survey is a compilation of various surveys with different standards.*

State Soil Survey #	Soil Texture or Soil Complex Name	% Slope	Acres	Mass Wasting Potential	Erosion Potential
1936	**SILT LOAM**	**8-30**	**94**	**LOW**	**MEDIUM**
9805	**SILT LOAM**	**65-90**	**36**	**HIGH**	**HIGH**
1934	**SILT LOAM**	**1-8**	**34**	**INSIGNIFIC'T**	**MEDIUM**
9804	**SILT LOAM**	**30-65**	**18**	**MEDIUM**	**HIGH**
1937	**SILT LOAM**	**30-65**	**1**	**MEDIUM**	**HIGH**

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

1) Surface indications:

There are indications of unstable soils in the immediate vicinity of the sale, and during initial recon and an on-site visit with the region geologist indicators of unstable soils were found within both units of the proposed sale. There were indicators of shallow slope instability such as exposed soils, vegetation changes and oversteepened and broken slopes. These indicators were observed along convergent, divergent and planar oversteepened inner gorge slopes occurring mostly as toe slopes adjacent to type 3 and 4 streams and in steeper headwall areas. The majority of these areas were bounded out of the harvest acres by the required RMZs. The few areas outside the RMZs that showed potential for instability were mainly at the head walls of these draws and were removed from the sale by either bounding them out of the harvest unit or buffering them with leave trees.

2) *Is there evidence of natural slope failures in the sub-basin(s)?*
☐*No* ☒*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*

There are indicators of shallow slope failures in several places in the sub-basins. These are generally associated with slopes greater than 65% found most commonly within the RMZs along the toe slopes of the main draws, along some planar to divergent slopes, within hollows that extend as far up as mid-slope, and/or within headwalls at the top of the steeper draws. Additionally deep-seated landslides appear to be locally present as seen in photos and suggested by topography, but where observed on the ground the degree of erosion and lack of collective indicators shows that they have been dormant for extended periods of time. The current conditions seem to favor the occurrence of small shallow failures.

Though potentially unstable slopes prone to shallow failures were identified within the original proposal, these areas are almost exclusively within the required RMZs. Areas not within the required RMZs are either bounded out of the sale or buffered with leave trees.

3) *Are there slope failures in the sub-basin(s) associated with timber harvest activities or roads?*
☒*No* ☐*Yes, type of failures (shallow vs. deep-seated) and failure site characteristics:*
*Associated management activity***:**

There are no known slope failures in the sub-basins, however photo evidence suggests some small debris slides have occurred after harvest. These may be attributed to loss of root strength and poor drainage.

4) *Is the proposed site similar to sites where slope failures have occurred previously in the sub-basin(s)?*
☐*No* ☒*Yes, describe similarities between the conditions and activities on these sites:*

Indicators suggest shallow slope instability is present within the immediate vicinity of the units, however there will be no road construction or timber harvest activities associated with this timber sale that will occur on potentially unstable slopes.

5) *Describe any slope stability protection measures (including sale boundary location, road, and harvest system decisions) incorporated into this proposal.*

Road construction will be located on ridgetops when possible and all roads will be properly designed with full bench construction on steeper side slopes. Cross drain culverts and ditchouts will be utilized to minimize the potential for mass wasting and potential slope failure. Shovel logging will not be allowed on slopes over 35% and all cable settings will require lead end suspension at a minimum. Additionally potentially unstable slopes that were identified within the sale and outside of the required RMZs were bounded out of the harvest acres either by increasing the width of the RMZ beyond HCP requirements or buffering the area with leave trees.

Slash piles on landings will be burned to reduce the weight on the slope and prevent failures.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.
Approx. acreage new roads: **4.5** *Approx. acreage new landings:* ***1.4*** *Fill source:*

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Some erosion could occur as a result of this proposal. Following current DNR road construction standards, the amount and severity of the erosion should be kept to a minimum. The areas of exposed soil will be grass seeded after construction.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? *Approximate percent of proposal in permanent road running surface (includes gravel roads):*

Approximately 5% of the sale area will be on impervious surfaces (gravel roads/landings).

h. Propose measures to reduce or control erosion, or other impacts to the earth, if any:
(Include protection measures for minimizing compaction or rutting.)

In order to reduce the potential for erosion and sediment delivery to streams, roads will be located on ridge tops and on side slopes averaging less than 40% when possible, and designed to current DNR standards. Following road construction, areas of exposed soil will be grass seeded. In order to reduce the potential for erosion or slope failure and sediment delivery to streams, drainage control measures will be designed and constructed to avoid concentration and diversion of runoff and discharge onto sensitive slopes, and to filter transported sediment. To reduce the potential of slope and landing failure, slash piles on landings above steep slopes will be pulled back to reduce the weight on the slope and ultimately burned. After harvest, seedlings will be planted or the stands will regenerate naturally. Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will persist within the Douglas-fir/red alder and Douglas fir/western hemlock timber types.

Road maintenance and periodic ditch and culvert cleanout will occur as needed on the MC 300 extension, MC 4100, MC 4300, MC 4310, MC 4320, MC 4330 and MC 4340 roads. The MC 340, MC 350 and MC 4150 roads, totaling 1400 feet, will be abandoned at the end of the sale. Abandonment will consist of culvert removal, ripping the road surface to a minimum depth of 18 inches, grass seeding and mulching exposed soils and reconstructing the ditch line of the existing roads.

In addition to standard measures used to reduce the potential for erosion and sediment delivery, potentially unstable slopes were removed from the harvest acres of this proposal by the required RMZs, bounding the areas out of the harvest units and buffering areas with leave trees.

2. Air

a. What types of emissions to the air would result from the proposal (i.e., dust *from truck traffic, rock mining, crushing or hauling,* automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

No emissions are anticipated other than minor amounts of heavy equipment exhaust, road dust created by harvest hauling, and smoke created from burning landings, which will be done in accordance with the State's Smoke Management Program.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Slash pile burning will be done in the fall during the rainy season under the direction of the State's Smoke Management Program. A burn permit will be obtained before burning begins.

3. Water

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. *(See timber sale map and forest practice base maps.)*

a) Downstream water bodies:

Two type 3 streams in Unit 1 flow into Mill Creek which flows in to the Willapa River. Two type 3 streams in Unit 2 flow into Elk Creek which flows into the Chehalis River.

b) Complete the following riparian & wetland management zone table:

Wetland, Stream, Lake, Pond, or Saltwater Name (if any)	Water Type	Number (how many?)	Avg RMZ/WMZ Width in Feet (per side for streams)
Stream	**5**	**15**	**0**
Stream	**4**	**1**	**100**
Stream	**3**	**4**	**200**

c) List RMZ/WMZ protection measures including silvicultural prescriptions, road-related RMZ/WMZ protection measures, and wind buffers.
An average 200-foot wide RMZ has been designated adjacent to four type 3 streams, and a minimum 100' wide RMZ has been designated along a type 4 stream. All fifteen type 5 streams within the sale will be protected by an Equipment Limitation Zone to decrease possible loss of stream function and decrease possible sediment delivery due to operating equipment. An Equipment Limitation Zone is a 30-foot wide buffer measured horizontally from the bankfull width of a type 5 water. On-site mitigation will be required if activities expose soil on more than 10% of the surface area within the zone. All four type 3 streams within the proposal are less than five feet in width, so wind buffers are not required. The Riparian Management Zones consist of large, wind-firm Douglas-fir and western redcedar surrounded by large, older red alder and big-leaf maple.

2) Will the project require any work over, in, or adjacent to (within 200 feet) to the described waters? If yes, please describe and attach available plans.
☐*No* ☒*Yes (See RMZ/WMZ table above and timber sale map.)*
Description (include culverts):

Tailhold cables may be strung across the type 4 stream and the four type 3 streams; however, no timber will be yarded through them. The fifteen type 5 streams within the sale may have cables strung across them, or timber felled into and across them. When yarding occurs near the thirteen type 5 streams, an Equipment Limitation Zone will be utilized to maintain stream function and stream bank integrity, and decrease possible sediment delivery.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. *(Include diversions for fish-passage culvert installation.)*
☒*No* ☐*Yes, description:*

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
☒*No* ☐*Yes, describe location:*

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
☒*No* ☐*Yes, type and volume:*

7) *Does the sub-basin contain soils or terrain susceptible to surface erosion and/or mass wasting? What is the potential for eroded material to enter surface water?*

Yes the Mill Creek sub-basins #4 and #7 and the Elk Creek sub-basin #8 contain soils susceptible to surface erosion. Material may enter the streams during moderate to high flows and can be observed as a noticeable increase in stream turbidity. The increased turbidity can be observed in streams originating in mature stands with no forest practice activity. The potential for eroded material to enter surface water based on this proposal is low due to the erosion control measures being included in the proposal (see B.1.h.).

8) *Is there evidence of changes to the channels in the WAU and sub-basin(s) due to surface erosion or mass wasting (accelerated aggradations, erosion, decrease in large organic debris (LOD), change in channel dimensions)?*
☐*No* ☒*Yes, describe changes and possible causes:*

There is evidence of surface erosion and small localized mass wasting in various portions of the sub-basins. Elevated streambeds attributed to accelerated aggradations of sediment in the channels are the main indicator of channel changes in the sub-basins. There is also a general decrease in the amount of large woody debris (LWD) in streams that were not buffered during past harvest activities due to a decrease in recruitment of LWD and the natural decay process of LWD. Where the stream banks erode, the channels may change dimension and/or direction over time.

9) *Could this proposal affect water quality based on the answers to the questions 1-8 above?*
☐*No* ☒*Yes, explain:*

This proposal is expected to have minimal to no effect on water quality. Items listed in B.1.h. above and B.3.d. below will minimize potential sediment delivery to streams. These mitigation elements should limit affects on water quality in relation to the items of concern revealed in questions 1-8 above.

10) *What are the approximate road miles per square mile in the WAU and sub-basin(s)?*
Are you aware of areas where forest roads or road ditches intercept sub-surface flow and deliver surface water to streams, rather than back to the forest floor?
☒*No* ☐*Yes, describe:*

The Mill Creek WAU averages 4.1 road miles per acre and the Elk Creek WAU averages 5.3 road miles per acre.

11) *Is the proposal within a significant rain-on-snow (ROS) zone? If not, **STOP HERE** and go to question B-3-a-13 below. Use the WAU or sub-basin(s) for the ROS percentage questions below.*
☒*No* ☐*Yes, approximate percent of WAU in significant ROS zone.*
Approximate percent of sub-basin(s):

12) *If the proposal is within the significant ROS zone, what is the approximate percentage of the WAU or sub-basin(s) within the significant ROS zone (all ownerships) that is (are) rated as hydrologically mature?*
N/A

13) *Is there evidence of changes to channels associated with peak flows in the WAU or sub-basin(s)?*
☐*No* ☒*Yes, describe observations:*

The shallow slope failures described in B.1.d.2. above occur during peak flow events and can result in accelerated sediment aggradations. Lack of LWD can contribute to stream channelization during peak flow events. Some inner gorge and steep headwall areas could potentially fail during heavy rainfall events.

14) *Based on your answers to questions B-3-a-10 through B-3-a-13 above, describe whether and how this proposal, in combination with other past, current, or reasonably foreseeable proposals in the WAU and sub-basin(s), may contribute to a peak flow impact.*

This proposal may slightly change the timing, duration, and amount of water in a peak flow event. Flow rates may increase slightly due to decreased transpiration and interception. However, the location of the units, the size of the units, and the fact there has been moderate logging in this area over the past ten years, all contribute to reducing peak flow problems. Leave trees scattered and clumped throughout the units (a minimum of 8 trees per acre) help maintain water quality and reduce peak flow.

15) *Is there water resource (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or downslope of the proposed activity that could be affected by changes in surface water amounts, quality, or movements as a result of this proposal?*
☒*No* ☐*Yes, possible impacts:*

16) *Based on your answers to questions B-3-a-10 through B-3-a-15 above, note any protection measures addressing possible peak flow/flooding impacts.*

The following are protection measures addressing peak flow/flooding impacts:
- **Designating RMZs averaging 200 feet wide adjacent to four type 3 streams, RMZs 100 feet wide adjacent to a type 4 stream and an Equipment Limitation Zone on fifteen type 5 streams.**
- **Maintaining regeneration harvest unit sizes of less than 100 acres**
- **Following green-up policies before harvesting adjacent DNR stands.**
- **Retaining leave trees to intercept precipitation, provide transpiration to moderate increases in soil moisture content, and maintain soil strength from tree roots during periods of increased precipitation and soil moisture content.**

b. Ground *Water*:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.
No.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

Insignificant amounts of oil and other lubricants may be inadvertently leaked as a result of heavy equipment use. No lubricants will be disposed of on site, and any leaks will be cleaned up.

3) *Is there a water resource use (public, domestic, agricultural, hatchery, etc.), or area of slope instability, downstream or down slope of the proposed activity that could be affected by changes in groundwater amounts, timing, or movements as a result this proposal?*
☒*No* ☐*Yes, describe:*

a) Note protection measures, if any.

c. Water Runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

Storm water runoff from roads and intercepted subsurface flow will be collected by road ditches and ditch-outs and diverted onto the forest floor. Ditch-outs and cross drain culverts will be placed to minimize the amount of ditch water directly entering existing stream channels.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Some logging slash may enter the fifteen type 5 streams.

a) Note protection measures, if any.
See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:
(See surface water, ground water, and water runoff sections above, questions B-3-a-1-c, B-3-a-16, B-3-b-3-a, and B-3-c-2-a.)

Cut banks will be revegetated prior to the onset of wet weather; the vegetative material will be used to collect sediment before entering flowing stream channels. Revegetation and reforestation measures will be utilized to reduce impacts to the earth. During the following planting season after harvest either tree seedlings will be planted or the stand will regenerate naturally. Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will remain on site after logging and persist within the Douglas fir/red alder and Douglas fir/western hemlock timber types. Leave trees are scattered and clumped throughout both units with a minimum of 8 trees per acre. Culverts and ditchouts will be installed at appropriate locations to divert ditch water onto the forest floor at the earliest point possible and will be maintained in a functional condition. A yearly maintenance schedule will be followed to allow for proper road surface runoff and drainage. Used oil will not be disposed of on site. Hazardous waste clean up materials will be kept on site during the operation. See B.1.h.

4. Plants

a. Check or circle types of vegetation found on the site:

☒deciduous tree: ☒alder, ☒maple, ☐aspen, ☐*cottonwood,* ☐*western larch,* ☐*birch,* ☐other:
☒evergreen tree: ☒*Douglas fir,* ☐*grand fir,* ☐*Pacific silver fir,* ☐*ponderosa pine,* ☐*lodgepole pine,* ☒*western hemlock,* ☐*mountain hemlock,* ☐*Englemann spruce,* ☒*Sitka spruce,* ☒*red cedar,* ☐*yellow cedar,* ☐other:
☒shrubs: ☒*huckleberry,* ☒*salmonberry,* ☒*salal,* ☒*other: Sword Fern*
☐grass
☐pasture
☐crop or grain
☒wet soil plants: ☐cattail, ☐buttercup, ☐bullrush, ☒skunk cabbage, ☒*devil's club,* ☐other:
☐water plants: ☐water lily, ☐eelgrass, ☐milfoil, ☐other:
☐other types of vegetation:
☐*plant communities of concern:*

b. What kind and amount of vegetation will be removed or altered? **(See answers to questions A-11-a, A-11-b, B-3-a-1-b and B-3-a-1-c. The following sub-questions merely supplement those answers.)**

1) Describe the species, age, and structural diversity of the timber types immediately adjacent to the removal area. (See landscape/WAU and adjacency maps on the DNR website at: http://www.dnr.wa.gov under "SEPA Center.")

Unit #1 is bordered by private land to the east and DNR managed lands to the north, south and west. The north side of the unit borders a 69-year-old stand of Douglas fir. The east boundary of the unit is formed by a stand of private Douglas fir reproduction, approximately 15 years of age. The south edge borders a 33-year-old stand of Douglas-fir and the west edge is bordered by a stand of 14-year-old Douglas-fir.

Unit #2 is bordered by DNR managed lands to the north, south and west and private land to the east. The north side of the unit borders 16-year-old Douglas fir regeneration and a 70-year-old stand of Douglas fir and western hemlock. The south edge of the unit is bordered by a 69-year-old stand of Douglas fir and western hemlock. The west edge is bordered by 5-year-old Douglas fir regeneration.

2) Retention tree plan:

Leave trees will consist of a minimum of 8 trees per acre in each unit all having a DBH of 12" or greater.

In Unit #1, 8 trees per acre (8 trees/acre*91.0 acres = 728.0) 728 trees total are left as leave trees. Leave trees were mainly scattered throughout ground based yarding areas and clumped in cable yarding and potentially unstable areas.

In Unit #2, 8 trees per acre (8 trees/acre*92.4 acres = 739.2) 739 trees total are left as leave trees. Leave trees were mainly scattered throughout ground based yarding areas and clumped in cable yarding and potentially unstable areas.

Leave tree clumps average 40 trees each. When possible, Douglas-fir, Sitka spruce and western redcedar with broken or deformed tops were chosen as leave trees to increase chances of wildlife use and future snag recruitment. The clumps are located along type 5 streams, inner gorges, steep head walls, and other areas throughout the harvest units.

c. List threatened or endangered *plant* species known to be on or near the site.

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
None Found in Database Search				

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Though disturbed, native plants such as ferns, salal, huckleberry, and salmonberry will remain on site and will later thrive within the plantaion, which will be established after harvest completion in Units 1 and 2. Some of the older trees on site will be left as wildlife trees to provide older forest characteristics.

5. Animal

a. Circle or check any birds animals *or unique habitats* which have been observed on or near the site or are known to be on or near the site:

birds: ☐hawk, ☐heron, ☐eagle, ☒songbirds, ☐*pigeon*, ☐other:
mammals: ☒deer, ☒bear, ☒elk, ☐beaver, ☐other: porcupine
fish: ☐bass, ☐salmon, ☒trout, ☐herring, ☐shellfish, ☐other:
unique habitats: ☐*talus slopes*, ☐*caves*, ☐*cliffs*, ☐*oak woodlands*, ☐*balds*, ☐*mineral springs*

b. List any threatened or endangered species known to be on or near the site *(include federal- and state-listed species).*

TSU Number	FMU_ID	Common Name	Federal Listing Status	WA State Listing Status
1	**41391**	**WINTER STEELHEAD**	**NONE**	**HEALTHY**
1	**41391**	**SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA**	**THREATENED**	**ENDANGERED**
2	**41599**	**SPOTTED OWL: Site:877-UPPER MILL CREEK - WILLAPA**	**THREATENED**	**ENDANGERED**

This proposal is within the Upper Mill Creek Owl Circle, however the entire sale area has been designated as non-habitat.

c. Is the site part of a migration route? If so, explain.
☒*Pacific flyway* ☐*Other migration route:* *Explain if any boxes checked:*

This proposal is located in the Pacific flyway, which is part of the Pacific Northwest forests. The area for this proposal is not generally the type of area used for resting or feeding by migratory waterfowl.

d. Proposed measures to preserve or enhance wildlife, if any:

By designing this sale to comply with the department's HCP, both wildlife and wildlife habitat will be preserved and enhanced. The small unit design is conducive to ungulate feeding patterns. Scattered and clumped leave trees are favorable to raptor perching, feeding, and nesting. Well-engineered and constructed roads reduce potential water quality impacts for down stream fish populations. Grass seeding exposed soils protects water quality and provides forage. Large diameter leave trees will enhance the wildlife habitat value of the future stand.

1) Note existing or proposed protection measures, if any, for the complete proposal described in question A-11.

Species /Habitat: **riparian dependent species** Protection Measures: **RMZs averaging 200 feet wide on four type 3 streams and a minimum 100 feet wide on one type 4 stream.**

Species /Habitat: **upland dependent species** Protection Measures: **A total of 1467 leave trees will be left clumped and scattered throughout Units 1 and 2.**

Species /Habitat: **Northern Spotted Owl** Protection Measures: **This proposed harvest consists entirely of non-habitat.**

6. Energy and Natural Resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

Does not apply.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

Does not apply.

7. Environmental Health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

Minimal hazard incidental to operating heavy machinery. There is the possibility of a fire starting during the operating period, especially during fire season.

1) Describe special emergency services that might be required.

Forest fire suppression(during fire season), hazardous waste cleanup.

2) Proposed measures to reduce or control environmental health hazards, if any:

Clean up materials will be kept on site during the harvest operations. Risk of fire spreading will be reduced by having a pump truck or trailer on site during logging operations that take place within fire season, and burning landings during the fall under cooler, wetter, conditions, subject to a written burning permit.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

None.

2) What types and levels of noise would be created by or associated with the project on a short-term or long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from this site.

Log trucks will be using forest roads, county roads and SR 6. This is a normal activity for this area, and is consistent with existing traffic. Noise will be increased during daylight hours due to the operation of heavy machinery.

3) Proposed measures to reduce or control noise impacts, if any:

None.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties? *(Site includes the complete proposal, e.g. rock pits and access roads.)*

Timber production, forest land management.

b. Has the site been used for agriculture? If so, describe.

No.

c. Describe any structures on the site.

None.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

No zoning for this area at this time.

f. What is the current comprehensive plan designation of the site?

The comprehensive plan designation is: resource lands, forest of long-term significance.

g. If applicable, what is the current shoreline master program designation of the site?

Not applicable.

h. Has any part of the site been classified as an “environmentally sensitive” area? If so, specify.

No.

i. Approximately how many people would reside or work in the completed project?

Does not apply.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

None.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

This proposal is consistent with the designated forest land classification by Pacific County under the Growth Management Act and the Habitat Conservation Plan (1997).

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principle exterior building material(s) proposed?

Does not apply.

b. What views in the immediate vicinity would be altered or obstructed?

1) Is this proposal visible from a residential area, town, city, developed recreation site, or a scenic vista?
☒*No* ☐*Yes, viewing location:*

2) Is this proposal visible from a major transportation or designated scenic corridor (county road, state or interstate highway, US route, river, or Columbia Gorge SMA)?
☒*No* ☐*Yes, scenic corridor name:*

3) How will this proposal affect any views described in 1) or 2) above?

Not applicable

c. Proposed measures to reduce or control aesthetic impacts, if any:

Aesthetic impacts will be mitigated by leaving a total of 1,467 leave trees clumped and scattered throughout the two units, retaining an RMZ averaging 200 feet wide along four type 3 streams and a minimum of 100 feet on one type 4 stream, and by regenerating the site during the first planting season after harvest.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

None.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

No.

c. What existing off-site sources of light or glare may affect your proposal?

Does not apply.

d. Proposed measures to reduce or control light and glare impacts, if any:

None.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

Hunting, berry picking, and other informal recreation activities.

b. Would the proposed project displace any existing recreational uses? If so, describe:

No. However, recreational uses may be altered and/or limited during operations.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

None.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None known.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None Known.

c. Proposed measures to reduce or control impacts, if any:
(Include all meetings or consultations with tribes, archaeologists, anthropologists or other authorities.)

None.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

Forest roads lead to Mill Creek county road, which leads to State Route 6, which links the I-5 corridor to the west coast.

1) Is it likely that this proposal will contribute to an existing safety, noise, dust, maintenance, or other transportation impact problem(s)?

No.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

No.

c. How many parking spaces would the completed project have? How many would the project eliminate?

Does not apply.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

New construction of approximately 8604' of gravel logging roads. See A.11.

1) How does this proposal impact the overall transportation system/circulation in the surrounding area, if at all?

This proposal does not significantly affect the current transportation system or traffic circulation.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

Approximately 15 vehicular trips per day will be generated during harvest operations. On completion of this proposal, some vehicle trips will be required to burn slash piles on landings and reforest the area. After that, the proposal will generate less than five trips per year, except for forest management activities.

g. Proposed measures to reduce or control transportation impacts, if any:

None are planned.

15. Public Services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.

No.

b. Proposed measures to reduce or control direct impacts on public services, if any.

None.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

None.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

Not applicable.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Completed by: Jacob Vaughn State Lands Forester Date: 06/21/2006
Title

Reviewed by: Ronn Schuttie State Lands Assistant Manager Date:
Title

Comments: _____